

Claims

1. A high-pressure pump, in particular for a fuel injection device of an internal combustion engine, having at least one pump element (32), which has a pump piston (34) that defines a pump work chamber (38) and that is driven to a reciprocating motion at least indirectly by a drive shaft (12) counter to force of a restoring spring (68), and the pump piston (34) is braced at least indirectly on the drive shaft (12) via a sleeve-like tappet (60), and the restoring spring (68) engages at least the pump piston (34), characterized in that a support element (50) is inserted into the tappet (60), on which support element the pump piston (34) is braced toward the drive shaft (12) and which support element is braced at least indirectly on the drive shaft (12); that the restoring spring (68) engages the pump piston (34) and the tappet (60) via a spring plate (66); and that the spring plate (66) is elastically deformable in the direction of motion of the pump piston (34) such that by its elastic deformation, deviations in the position of its contact faces (56; 64) on the pump piston (34) and on the tappet (60) are compensated for.
2. The high-pressure pump in accordance with claim 1, characterized in that the tappet (60) is kept in contact with the support element (50) by the restoring spring (68).
3. The high-pressure pump in accordance with claim 2, characterized in that the tappet (60) has a bearing face (64), protruding inward into it, for the support element (50), with which bearing face the tappet (60) comes to rest on the support element (50) toward the drive shaft (12).

4. The high-pressure pump in accordance with one of claims 1 through 3, characterized in that the spring plate (66) with its central region (166) engages the pump piston (34) and with its peripheral region (266) engages the tappet (60).
5. The high-pressure pump in accordance with claim 4, characterized in that the pump piston (34), on its end toward the support element (50), has a piston base (56) of increased diameter compared to its remaining region, which piston base is engaged by the spring plate (66).
6. The high-pressure pump in accordance with one of the foregoing claims, characterized in that the spring plate (66) has a lesser stiffness than the restoring spring (68).
7. The high-pressure pump in accordance with one of the foregoing claims, characterized in that a roller (52), which rolls on the drive shaft (12), is rotatably supported in the support element (50), on its side toward the drive shaft (12).
8. The high-pressure pump in accordance with claim 7, characterized in that the support element (50) is provided, at least in the region of the bearing (54) of the roller (52), with a wear guard layer.